

Meade® Starfinder™ 12.5" and 16" Equatorial and Dobsonian Reflecting Telescopes

Complete, economically-priced reflectors, with Meade premium-grade optics and quality workmanship throughout.

Meade Starfinder reflecting telescopes, in both the Equatorial and Dobsonian models, represent some of the finest telescope values available anywhere. Rarely have large-aperture, fully-equipped telescopes been offered at such competitive pricing levels. Consider these standard-equipment features:



All Starfinder Equatorial and Dobsonian telescopes include a premium-grade Super Plössl 26mm eyepiece.

Meade American-made Optical Systems: All Starfinder models, both Equatorial and Dobsonian, include a superb, *hand-figured* parabolic primary mirror manufactured of low-expansion, fine-annealed Pyrex® glass at the Meade Irvine, Calif., factory. Every mirror meets the theoretical limit of resolution for its aperture, and is matched with an elliptical flat secondary mirror of appropriate focal ratio. Mirrors included with Equatorial and Dobsonian models are identical in optical quality, performance, and specifications.

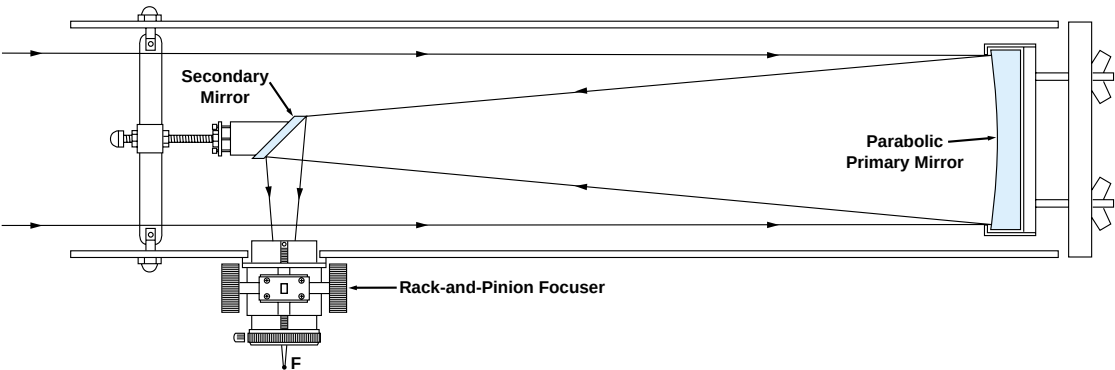
The Starfinder Equatorial Mount:

The equatorial mount included with the Meade Starfinder 16" Equatorial telescope (*facing page*) is designed for serious astronomical purposes and greatly facilitates the tracking of celestial objects. Manufactured of machined aluminum, the mounting provides a rock-solid platform for the optical tube system and includes as standard-equipment preloaded ball bearings on the polar axis and 1.5" solid steel shafts on

Specifications and Features: Meade Starfinder™ Reflecting Telescopes

TELESCOPE:	Starfinder Dobsonian 12.5	Starfinder Equatorial or Dobsonian 16
Optical Design	Newtonian Reflector	Newtonian Reflector
Diameter/Clear Aperture	318mm (12.5")	406mm (16")
Primary & Secondary Mirrors	Grade-A Pyrex® glass, fine annealed	Grade-A Pyrex® glass, fine annealed
Eyeiece	Super Plössl 26mm (1.25")	Super Plössl 26mm (1.25")
Secondary Mirror Support	4-vane; steel	4-vane; steel
Focal Length; Focal Ratio	1525mm; f/4.8	1830mm; f/4.5
Resolving Power (arc secs.)	0.36	0.28
Optical Coatings	standard aluminum	standard aluminum
Limiting Visual Magnitude	15.0	15.6
Limiting Photographic Magnitude	17.4	19.0
Image Scale	0.95"/inch	0.79"/inch
Maximum Practical Visual Power	600X	700X
Optical Tube	15.1" dia. x 58" long spiral-wound Sonotube	19" dia. x 66" long spiral-wound Sonotube
Secondary Mirror Minor Axis	2.60"	4.00"
Secondary Mirror Obstruction	4.3%	6.2%
16" Equatorial Model, only:		
Equatorial Mounting		German-type
Polar and Dec. Shaft Dias.		1.5"
Bearings		RA: 2 ball bearings; Dec.: Nylon
Pier (dia. x height)		6.0" x 18" steel
Motor Drive System		9-volts D.C.
Drive Gear		5" worm gear
Setting Circle Dias.		RA and Dec.: 6"
Latitude Range		25° to 60°
Material		aluminum castings
Total Net Telescope Weight (approx.)		247 lbs.
Heaviest Component for Field Assembly		62 lbs.
Shipping Weight (approx.)		273 lbs.
Dobsonian Models, only:		
Dobsonian Mounting		
Base Diameter	26.75"	33.6"
Mount Dimensions (approx.)	25" square x 22" high	31" square x 30" high
Materials	thermally-fused Melamine®, industrial particle board core.	
Bearings:		
Altitude	Nylon	Nylon
Azimuth	Teflon	Teflon
Net Weights:		
Optical Tube	55 lbs.	100 lbs.
Mounting	41 lbs.	70 lbs.
Shipping Weight (approx.)	106 lbs.	185 lbs.

Design of the Newtonian Reflecting Telescope



In the design of the Newtonian Reflecting Telescope, light enters from the left and passes the entire length of the telescope tube to a parabolic primary mirror, where it is reflected back up the tube to the secondary flat mirror. The secondary mirror, set at a 45° angle to the telescope's optical axis, reflects the light outside the telescope tube where the image is brought to a focus at F.

(right) **Meade Starfinder Equatorial 16: 16" f/4.5.** Shown with standard-equipment #77 2" giant rack-and-pinion focuser and 8 x 50mm viewfinder and with optional #2019 Magellan II Computer-Corrector System (p. 89). Background photos by Paul Roques, Williams, Arizona, with the Starfinder Equatorial 16 (top to bottom): the Omega Nebula (M17), 25-min. exposure; the Lagoon Nebula (M8), 40-min.; the Horsehead Nebula, 60-mins. All photos on Kodak TP2415 film.

both axes. The Equatorial 16 readily accepts auxiliary equipment and tracks celestial objects with ease and precision. Standard components include the Meade #77 2" giant rack-and-pinion focuser; #545 8 x 50mm viewfinder; and multi-coated Series 4000 Super Plössl 26mm (70X) eyepiece. The Starfinder Equatorial 16 also provides abundant opportunities in astrophotography as well: with its fast f/4.5 photographic speed, the telescope can record high-density photo emulsions of the entire range of deep-space objects in relatively short (5- to 30-minute) exposures. See p. 89 for available photo accessories.

The machining tolerance of all mount components is .001", eliminating the annoying backlash, internal vibrations, and side-wobble so detrimental to serious observing. Setting circles are provided on both axes to facilitate the location of faint objects directly from their catalogued coordinates.

Battery-Powered Cordless Drive System:

With the motor drive in operation on the Starfinder Equatorial 16, the observer need not touch the telescope to follow the stars, planets, Moon, or deep-space objects in their paths across the sky: the drive system enables the instrument to track these objects automatically, compensating fully for the effects of the Earth's rotation. Also included is an automatic clutch mechanism so that, even when the motor drive is in operation, the telescope tube may be moved manually at will in any direction. When the observer releases manual contact with the telescope, the drive automatically resumes tracking. The Starfinder motor drive system operates for about 50 hours from six (user-supplied) AA-size batteries and tracks celestial objects by means of a DC servo motor, actuated through a reduction gear system.

The Starfinder Dobsonian

Mount: Meade Starfinder Dobsonian mountings provide for smooth manual motions of the telescope in both altitude



and azimuth. Both telescope axes ride on low-backlash Teflon/Nylon bearings, facilitating the location and tracking of celestial objects anywhere in the sky. Each mount is manufactured of cabinet-quality materials and designed for a lifetime of use. Handles are provided for easy portability.

Spiral-Wound Optical Tubes: The Sonotube™ optical tubes of Starfinder reflectors have excellent insulating characteristics, so that thermal tube currents are reduced to an absolute minimum. While the smooth white finish of the tube is not intended to match the gleaming, hard, powder-coat finish of Meade Schmidt-Cassegrains and *ED* Apochromats, it nonetheless instills a solid pride-of-ownership in any Starfinder owner.

Applications of the Telescope: Meade Starfinder Equatorial and Dobsonian telescopes allow for a breathtaking array of visual observations: galaxies, nebulae, star clusters — in all their variations of form, color, and extent — as well as the Moon, planets, comets, and other objects within the solar system, may be studied in detail. Visually in any Starfinder model, Saturn's ring system is a magnificent object, with the Cassini division routinely visible; minor ring divisions, including the crêpe ring, may be resolved and detail in Saturn's surface structure is discernible. In deep-space the Andromeda galaxy displays a brilliant nucleus surrounded by a glowing nebulosity that fills the field even at low powers. The Orion Nebula (M42) presents a dazzling sight in any Starfinder: the Trapezium is enveloped in diffuse nebulosity; and details of the nebula's structure are well-resolved, with the tenuous outer regions readily apparent. Beyond this brief listing, standard star catalogs enumerate literally thousands of objects within the visual grasp of these Meade telescopes: the motivated amateur will find it near impossible to exhaust the instrument's potential.

Photographically, excellent results of the Moon and planets can be obtained with the Starfinder Equatorial 16" model, using the optional Meade camera adapter (p. 89) and a 35mm camera body. With modern superfast black-and-white and color films, the Starfinder Equatorial 16 has been used to obtain photo exposures of as long as 90 minutes' duration, and with spectacular results, as the background astrophotos on p. 87 demonstrate.

Magellan Computer Systems: Meade Magellan Telescope Computer Systems, designed specifically for Meade Starfinder Dobsonians and Equatorial, enable fast and easy object-location, using Magellan's massive 12,218-object database. See p. 89 for further details.

Specifications: Starfinder Equatorial 16—Includes 16" Newtonian optical system (D = 406mm, F = 1830mm, f/4.5) with standard aluminized parabolic primary mirror and elliptical flat secondary mirror; #77 2" giant rack-and-pinion focuser with 1.25" and 2" eyepiece-holders; 8 x 50mm viewfinder; 4-vane secondary mirror support; 9-point flotation mirror cell; equatorial mount, pier and tripod legs; setting circles on both axes; 9-volt DC motor drive system (accepts 6 user-supplied AA-size batteries), with DC motor, reduction gear system, and automatic clutch; Super Plössl 26mm eyepiece (1.25"); Sonotube 19" x 66" long with end ring; operating instructions.

Specifications: Starfinder Dobsonian 12.5 and 16—Includes 12.5" or 16" Newtonian optical system (D = 318mm, F = 1525mm, f/4.8 or D = 406mm, F = 1830mm, f/4.5), with standard aluminized parabolic primary mirror and elliptical flat secondary mirror; #77 2" giant rack-and-pinion focuser with 1.25" and 2" eyepiece-holders; 8 x 50mm viewfinder; 4-vane secondary mirror support; easy-release mirror cell; Dobsonian mounting with Teflon/Nylon bearings on both axes; Super Plössl 26mm eyepiece (1.25"); Sonotube 15.1" x 58" long (12.5") or 19" x 66" long (16") with end ring; operating instructions.

Starfinder Dobsonian 16" (left) and 12.5" telescopes include a 2" focuser, 8 x 50mm viewfinder, and premium-grade Super Plössl 26mm eyepiece.



Accessories for Meade Starfinder Reflecting Telescopes

See also pp. 94 - 107.



Series 4000 Eyepieces: An excellent match to the achromatic characteristics of the Newtonian reflector, Meade Series 4000's bring out the best in these telescopes. See pp. 94 - 95 for further details. *Note:* Because of pupillary diameter restrictions of the human eye, no eyepiece of longer focal length than 32mm can effectively be used with the short focal ratios of Starfinder 12.5" or 16" models.

Series 4000 8mm - 24mm Zoom Eyepiece: High-resolution, 7-element multi-coated optics with 55° field at 8mm. Graduated scale in 1mm units indicates exact focal length in use. An excellent complement to all Meade Starfinder telescope models. (See also p. 96.)

#140 Series 4000 2x Apochromatic Barlow Lens: Designed to complement premium-grade eyepieces, such as the Meade Series 4000 oculars, the #140 doubles any eyepiece magnification without reducing the level of image resolution or color correction. (See p. 96.)

Series 4000 Photo-Visual Color Filters: A significant aid in enhancing image contrast on the Moon and planets, Meade Series 4000 color filters thread into the barrels of all Meade 1.25" eyepieces, and into the barrels of virtually all other 1.25" eyepiece brands as well. The ND 96

Neutral Density filter is of particular assistance in observing the Moon with Starfinder telescopes, where the glare of the half-to-full Moon can be somewhat overpowering. (See pp. 98 - 99.)

Series 4000 Nebular Filters: Meade #908B, #908N, and #908X filters effectively block the most common forms of light pollution, while allowing nebular light to pass through essentially unattenuated. (See also pp. 100 - 101.)

Camera Adapters: For photography through a Starfinder telescope, the Meade **Basic Camera Adapter** is required. An eyepiece, typically of 15mm to 32mm focal length, can be inserted into the adapter and projects an enlarged image onto the camera film plane. Alternately, the **Variable-Projection Camera Adapter** (p. 103) permits a continuous range of projection magnifications. Each camera adapter requires a T-Mount for the specific brand of 35mm camera employed.



Meade® Magellan™ Telescope Computer Systems



Magellan I Computer System: Magellan I directs your manual motions of a Starfinder Dobsonian or Equatorial to locate, in 10 to 15 seconds, any object in the sky, either by calling up an object from Magellan I's database or by moving the telescope to known celestial coordinates (RA and Dec.).

Magellan I's database includes 7,840 NGC objects (the complete NGC catalog); 4,093 Index Catalog

objects; 110 Messier objects; the 8 major planets from Mercury to Pluto, and more — 12,218 objects in total.

Specifications: Magellan I Telescope Computer System—Includes hand controller/display unit with red-backlighted LCD display (2-line x 16 alphanumeric characters), four pushbuttons, RS-232 serial interface, 12,218-object computer database, and 2-star alignment; two Hewlett-Packard optical encoders; flash memory permitting user reprogramming and software updating; bracket for placement of the hand controller on the telescope tube; attachment hardware and connection cords for the specific models listed below; instructions.

#2010: for Meade Starfinder Dobsonian 12.5 or 16

#2012: for Meade Starfinder Equatorial 16

Magellan II Computer-Corrector System: The Meade Magellan II attaches to the Starfinder Equatorial 16 telescope (see p. 87) and includes all of the Magellan I capabilities and features. In addition Magellan II permits four dual-axis drive speeds — 2x photo-guide; 8x image centering at high powers; 16x image centering at low powers; and 32x microslowing—all of which are actuated through the Magellan II hand controller (*right*). Provided with the system are the required Declination motor assembly and tangent-arm hardware that enable electronic control of the telescope in Declination. With the Magellan II keypad controller locating even the most obscure objects is fast and easy.



Specifications: Magellan II Computer-Corrector System—Includes keypad hand-controller with red-backlighted LCD display (2-line x 16 alphanumeric characters), 19 pushbuttons, RS-232 serial interface, 12,218-object computer database, 2-star alignment, and four dual-axis speed rates (2x, 8x, 16x, and 32x sidereal); two Hewlett-Packard optical encoders; electric Declination control system; control panel; bracket for placement of the hand controller on the telescope tube; attachment hardware and connection cords for the specific models listed below; instructions.

#2019: for Meade Starfinder Equatorial 16